DOI:
10.1017/S1352465813000076

Document Version
Peer reviewed version

Development of a Functional Analytical Nurse Observation Chart (FANOC)

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ACCEPTED MANUSRIPT
Behavioural and Cognitive Psychotherapy, 2014, 42(1): 111-116.
http://dx.doi.org/10.1017/S1352465813000076

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Background: There has been little evaluation or development of nurse observation charts on psychiatric in-patient units since they were first introduced. **Aim:** We aimed to develop a new nursing chart that adds a functional and contextual assessment of the observed behaviour. We describe its initial evaluation in an in-patient setting. **Method:** A member of the staff coded a participant's behaviour as either an instance of an individual's daily life problem; or an improvement; or a non-clinically relevant behaviour. We evaluated the charts in 14 in-patients and compared the coding of the behaviour against that of one of the investigators. **Results:** After brief training the inter-rater agreement resulted in Kappa = 0.496 with $p < .001$. Removal of a rating of neutral behaviours resulted in a higher Kappa = 0.546 with $p < .001$. **Conclusions:** The inter-rater reliability was only moderate for the Functional Analytical Nurse Observation Charts. Frequent training and support from management and therapy staff is required to maintain a psychologically informed environment and observation in an in-patient setting. An area for further research is to explore the impact that a FANOC has on staff satisfaction and an individual's experience of care, and whether it can assist in determining mediators of change before an improvement in symptoms.

Keywords: Inpatient CBT, assessment, functional analysis, measurement.

Introduction

Ruge (1934) first described the use of Nurse Observation Charts in psychiatric units. Such charts record the location and occasionally the behaviour of an individual and are used routinely for in-patients. Good practice guidelines and discussion of nursing observation exist but there has been no development or evaluation of the purpose of nursing observation. The charts may be diligently completed but are often filed and examined again only in the case of an investigation following a "Serious Untoward Incident" to determine the timing of the event. Such charts serve an institution in monitoring risk but do little to monitor change or improve relationships between patients and staff (Barker and Cutcliffe, 1999). Job satisfaction in staff may also be poor partly because of such charts and lack of therapeutic engagement with patients (Higgins, Hurst and Wistow, 1999).

Behaviour therapy has a long tradition of recording and analysing behaviour in context, for example in learning disability. However, this has required trained observers and detailed protocols. This is not possible on a general psychiatry in-patient unit and does not assist in the engagement of staff with patients. We decided therefore to develop an observation chart that (a) aimed to monitor improvement or deterioration in a problem and record progress for feedback to the patient and clinicians (b) could be integrated with existing observation charts for general nursing without any additional staffing. The innovation of the tool is to add a functional and contextual assessment of the observed behaviour, which led to the term "Functional Analytic Nurse Observation Chart" (FANOC). The tool was inspired by Functional Analytical Psychotherapy that has developed detailed coding for ratings of inter-personal interactions between a client and therapist (Kanter, Tsai and Kohlenberg, 2010).

Barker and Cutliff (2000) found that the traditional focus of nursing, which involved engaging patients in care, has reduced in scope. Barker (2001) suggests that this may be due to over work and administration and limited nurse-patient contact rather than a lack of skill. Completing nursing observation charts is often part of risk management. Gournay, Ward, Thornicroft and Wright (1998) found that there are problems with recruitment and retention of staff and Barker and Rolfe (2000) suggested that this may be due to the absence of a therapeutic focus in day to day nursing care.

This is the report of a pilot study of the evaluation of the FANOC for patients on general observation. It was not evaluated for continuous observation of patients who were at risk. The FANOC aims to allow staff members to use this time as an opportunity to engage the patients in a therapeutic way and therefore to re-establish a therapeutic focus within acute psychiatric settings.

Method

Fourteen participants with a main diagnosis of either Obsessive Compulsive Disorder or Body Dysmorphic Disorder from the Priory Hospital North London (12 patients) and The Anxiety Disorders Residential Unit, Bethlem Royal Hospital (2 patients) were observed with the chart. Prior to commencing the observations, a formulation of the participant's behaviour was developed with each person, their key nurse and therapist. This was individually determined. The staff members collaboratively drew up a list of examples of behaviours with the participant that would illustrate signs of improvements and how their problem appears to others in everyday life. They used coding based on Functional Analytic Psychotherapy as outlined below:

Code "-1": This is a clinically relevant behaviour (CRB) which represents a patient's daily life problem. For example "compulsive hand-washing", "pacing up and down the corridor", or "avoiding women to prevent triggering intrusive sexual thoughts".

Code "+1": This is a clinically relevant behaviour that shows daily life improvement. It may be inter-personal behaviour like talking to another patient in a common area; phoning a relative or interacting with the nurse with good eye contact and smiling; addressing another person; smiling; exercising or walking in grounds in someone who had been inactive; taking a shower/bath in someone who had previously neglected themselves. Other relevant behaviours may be part of a homework task that is more easily observable, for example a behavioural experiment or exposure task such as touching a toilet seat in someone with Obsessive Compulsive Disorder.

Code "0": This is a non-clinically relevant behaviour or one that is not codeable (for example the patient is not present to observe or is appropriately asleep).

Examples of these codes for a specific participant were displayed at the front of the observation chart for all staff members to see and use when completing the charts. However, it would be impossible to define all possible CRB1s and CRB2s and staff had to think functionally in determining whether a new behaviour that they observed was a CRB1 or CRB2 or neither. Nursing staff were asked to adapt their standard observation chart by describing the behaviour of the participant and their interaction and to then code their observation.

The time sampling of the coding was flexible. However, more frequent observations may provide a more accurate measure that is based on the percentage of CRB1s and CRB2s. In this study, the level of observations by the staff was hourly. Staff included health care assistants or nursing staff (a mixture of untrained and qualified staff) who were asked to code the behaviour once in the hour from 8am to

8pm. This was done at any point in the hour in an attempt to prevent a participant changing their behaviour in response to the predicted observation.

CRBs were individually determined by that staff member; however, sometimes it was necessary for the staff to clarify their observation with the patient or a colleague to determine the function of the behaviour. For example, if a patient is sitting alone, he might be ruminating or trying to distract himself from unpleasant thoughts and feelings (CRB1), or he might be practising a compassionate mind exercise (CRB2). If they were doing a task that could be confused with a CRB1, then a patient might be asked to display a sign next to them requesting not to be disturbed.

Table 1 is an example of the possible helpful, unhelpful and neutral behaviours in a patient with BDD. The number of helpful and unhelpful coded behaviours were summated at the end of each day and graphed. This was then used to discuss progress with the participant. The coding was measured for inter-rater reliability between the staff member against one of the investigators. Both staff members rated the observations at the same time each hour. One hundred and eighty observations were collected for the study and analysed.

[Table 1 near here]

Results

The results of the inter-rater agreement including the pilot data resulted in Kappa = 0. 462 with $p < .001$. After further training the inter-rater agreement resulted in Kappa = 0.496 with $p < .001$. This measure of agreement, while statistically significant, is only moderate (Kappa values from 0.40- 0.59 are considered moderate). The inter-rater agreement removing "neutral" scores resulted in a Kappa = 0.546 with $p < .001$.

Disagreement over the coding of some behaviours occurred in complex participants depending on the context. An example of this was a participant with both OCD and an eating disorder. Some of her unhelpful behaviours were staying in her bedroom (due to fear of contamination) and not eating. When a staff member observed this participant eating in her bedroom, it was difficult to define this as a helpful or unhelpful behaviour as eating was helpful but isolating herself in her room was not. It was also difficult to notice very subtle changes in behaviour e.g. for some patients with OCD, having a focused conversation may be a sign that they are not engaging in a mental ritual at the same time but this was difficult to determine and required a good psychological understanding of the problem.

Discussion

Our findings indicated that there was a statistically significant correlation between the nursing observations and one of the investigators, although this was only a moderate correlation. We found that the inter-rater reliability only slightly improved since the pilot study was completed. This showed that, as staff were given more training and feedback, they became more confident and consistent in their scoring of behaviours. This may also have been because over time staff also establish a better therapeutic relationship with the participant and therefore are able more easily to identify helpful and unhelpful behaviours. We also observed that the inter-rater reliability improved when all neutral behaviours were removed from the scoring, which shows that it may be easier to define what is helpful/unhelpful and more challenging to define neutral behaviours.

We found that some staff members “grasped” the concept of FANOC more easily than others. Those staff with a background in psychology or some exposure to

cognitive behaviour therapy found it easier to complete and to provide feedback to therapy staff regarding when a participant was deteriorating or had done well on a day. Other members of staff needed more training to fully understand and become confident completing the charts. We only trialled the chart in participants with OCD or BDD but there is no reason why it could not be used in patients with other disorders. It is also better if staff use the chart routinely for all patients rather than for selected patients so that it becomes part of the culture. We believe that the FANOC would be well suited for units that are more psychologically minded and are able to adapt the coding if a helpful behaviour becomes routine. Future studies might also compare a staff member rating against that of a patient.

The FANOC is potentially beneficial for the patient to receive feedback about their progress and help in setting daily goals. It tries to solve the problem of a lack of a therapeutic focus in routine monitoring but whether it achieves this will need to be evaluated. Further research would extend the FANOC to the effect of not just monitoring but positively reinforcing CRB2. All interactions with staff and residents are potentially therapeutic and if staff can effectively identify CRBs in a FANOC then the next step is for them to respond "naturally" to CRB2s in the moment *and* to notice their effect on the patient. In a cognitive behavioural therapeutic community staff and residents would be trained to ignore CRB1s (or in some cases to empathically comment on the behaviour) unless there are good clinical reasons to intervene directly in the moment (for example, if a patient is at risk of serious harm or is being abusive). Natural reinforcers for CRB2s include being warm, asking more questions, having a longer interaction, encouraging more, or engaging in more eye contact. This is the basis of Functional Analytical Psychotherapy and the shaping of desirable behaviour

in the moment with natural reinforcers rather than ones that are arbitrary (for example, tokens that are controlled by the person providing the reinforcement and ones in which the change of behaviour tends to benefit others.) Natural reinforcers may be followed by a discussion on how the behaviour may then generalize to outside the hospital environment.

Another area for further research is the use of FANOC in patients on continuous nursing; to explore the impact that the FANOC has on a patient's experience of care to see whether re-establishing the therapeutic focus within acute psychiatric settings can lead to a change in patient and staff satisfaction. The FANOC may also have potential as a research tool to determine mediators of change before symptom improvement and is a potential step in improving engagement in what can be a routine, task orientated process.

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Table 1. Example of helpful, unhelpful and neutral behaviours in a patient with Body Dysmorphic Disorder

+1 (Helpful behaviours)	-1 (Unhelpful behaviours)	0 (Neutral behaviours)
Spending time out of his bedroom Interacting with others without an unhelpful behaviour Having the light on in his room Making eye contact Going out without wearing his hat Wearing a t-shirt exposing his arms Doing an agreed behavioural experiment or exposure task	Lying down in his bedroom during the day (isolating himself) Sitting in the dark Wearing a cap Checking his appearance in the mirror Discussing his appearance Pulling his sleeves over his hands Staring at the floor when people speak to him Applying fake tan to his hands Using tinted moisturiser on his face Avoiding eye contact Ruminating (check with patient)	Sleeping at appropriate times (between 9pm-8am) Eating meals